CLAIMS

1. A zirconium-based alloy for the components of the active core of nuclear reactors, comprising niobium, iron, oxygen, carbon, and silicon, featured by a structure comprising an α-solid zirconium solution, CHARACTERIZED in that said alloy further comprises nickel, with the following ratio of the constituents (on a weight percent basis):

niobium	0.5 - 3.0
iron	0.005 - 0.02
oxygen	0.03 - 0.12
carbon	0.001 - 0.02
silicon	0.002 - 0.02
nickel	0.003 - 0.02
zirconium	being the balance,

and the structure of the alloy further comprises particles of the β Nb-phase which are sized below 0.1 μm and are uniformly distributed in said α-solid zirconium solution.

2. A zirconium-based alloy for the components of the active core of nuclear reactors, CHARACTERIZED in that its structure further comprises particles of intermetallics Zr-Fe-Nb.

3. A zirconium-based alloy for the components of the active core of nuclear reactors, CHARACTERIZED in that it comprises said constituents taken with the following ratio therebetween (on a weight percent basis):

niobium	0.5 - 3.0
iron	0.005 - 0.02
oxygen	0.03 - 0.12
carbon	0.001 - 0.02

silicon	0.002 - 0.02
nickel	0.003 - 0.02
zirconium	being the balance,

the niobium content of the β Nb-phase particles being within 79 to 95%.

4. A zirconium-based alloy for the components of the active core of nuclear reactors, CHARACTERIZED in that it comprises said constituents taken with the following ratio therebetween (on a weight ratio basis):

niobium	0.5 - 3.0
iron	0.02 - 0.5
oxygen	0.03 - 0.12
carbon	0.001 - 0.02
silicon	0.002 - 0.02
nickel	0.003 - 0.02
zirconium	being the balance,

the iron/niobium ratio being 0.05:0.2.

5. A zirconium-based alloy for the components of the active core of nuclear reactors, CHARACTERIZED in that it comprises said constituents taken with the following ratio therebetween (on a weight ratio basis):

niobium	0.5 - 3.0
iron	0.005 - 0.5
oxygen	0.1 - 0.2
carbon	0.001 - 0.02
silicon	0.002 - 0.1
nickel	0.003 - 0.02
zirconium	being the balance,

with the niobium content of the β-particles in the Nb-phase ranging between 75 and 95%, the α-solid solution being further oxygen-hardened.

6. A zirconium-based alloy for the components of the active core of nuclear reactors as claimed in any one of claims 2, 4, and 4, CHARACTERIZED in that the size of the particles of intermetallics Zr-Fe-Nb is below 0.3 μm.